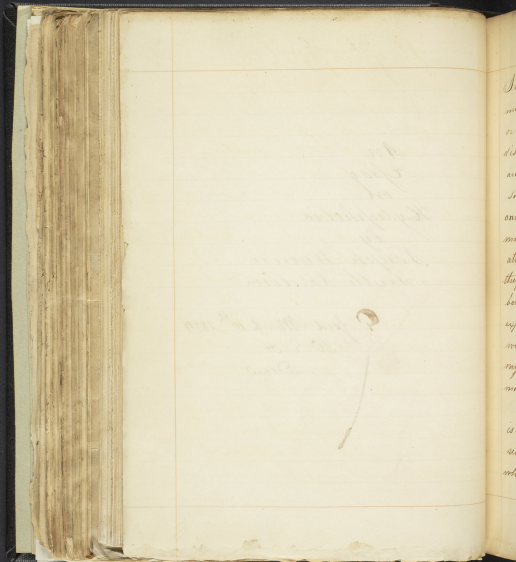


too much resorted to & as a preventive

An
Essay
on
Hydrophobia
by
Joseph Warren
South Carolina

Passed March 10th 1824
W. F. H.
Dean



Hydrophobia

In writing the following sheets I regret much my inability, to offer any thing new or interesting; more especially on a disease that is so little understood, and about which physicians differ so widely both as regards its pathology and treatment. I am well aware that many able and distinguished writers have attempted to explain its nature, but they certainly have fallen far short of being satisfactory, and it will not be expected that I can offer any thing new with regard to it, but I shall satisfy myself merely by giving a few of the most generally received opinions.

Hydrophobia, fortunately is not of frequent occurrence in the United States, but it is a disease which the practitioner has occasionally

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to witness, although almost destitute of the hope of effecting a cure and oftentimes deprived of the consolations of affording even temporary relief, while the patient in the greatest agony implores for assistance. It can not be said that this disease is absolutely incurable, I believe we can prove to the contrary, by some few cases.

I think with many that there are few diseases which can in their own nature be pronounced desperate, but properly speaking, we are unacquainted with the medicines calculated for their cure.

Many patients have been dismissed by the most celebrated and experienced physicians as incurables, who have actually recovered merely by the efforts of unassisted nature and occasionally by

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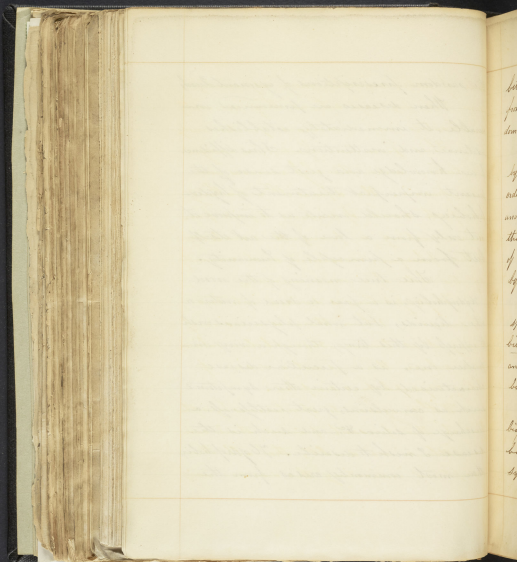
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the random prescriptions of ignorant Quacks

When diseases are pronounced incurable, it immediately establishes indolence, and inattentions. This diffidence of our knowledge and just sense of the present imperfect treatment of Hydrophobia, should incite us to improve it, not only from a love of the art itself, but from a principle of humanity.

The true meaning of the word

Hydrophobia, is a fear or dread of water or other liquids, but what physicians wish to express by this term, though a very improper one, is a peculiar disease characterised by certain other symptoms such as convulsions, great restlessness, a discharge of saliva &c. - and such is the disease I wish to describe. Hydrophobia then most commonly arises from the



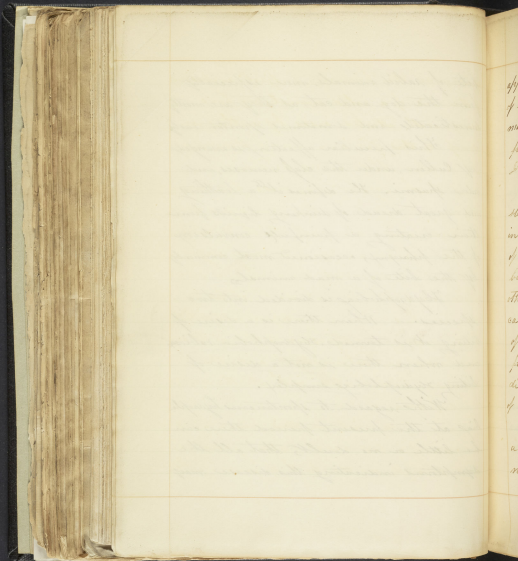
bite of rabid animals, more especially
from the dog, and cat, as they are mostly
domesticated, and sometimes spontaneously.

This peculiar affection is arranged
by Cullen, under the class neuroses, and
order spasmi. He defines it as a loathing
and great dread of drinking liquids from
their creating a painful convulsion
of the pharynx, occasioned most commonly
by the bite of a mad animal.

Hydrophobia is divided into two
species. When there is a desire of
biting it is termed, *Hydrophobia rabiosa*,
and when there is not a desire of
biting *Hydrophobia simplex*.

With regard to spontaneous hydropho-
bia at the present period there can
be little or no doubt, that all the
symptoms indicating this disease may

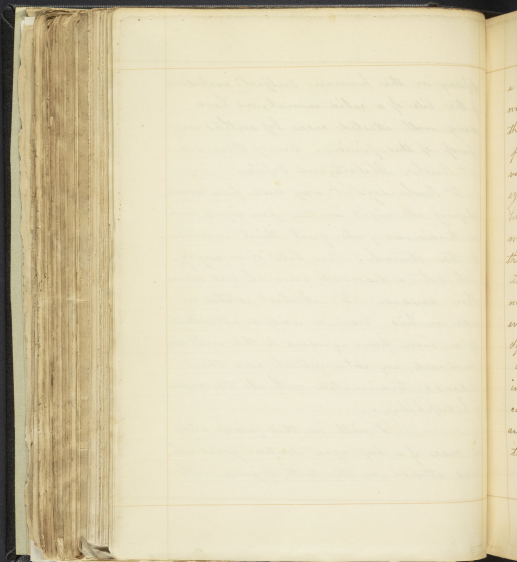
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appear in the human subject; exclusive
of the bite of a rabid animal, we have
many well attested cases by authors in
proof of this opinion. among these are
Dr Rush, Alibert, and Celsus,

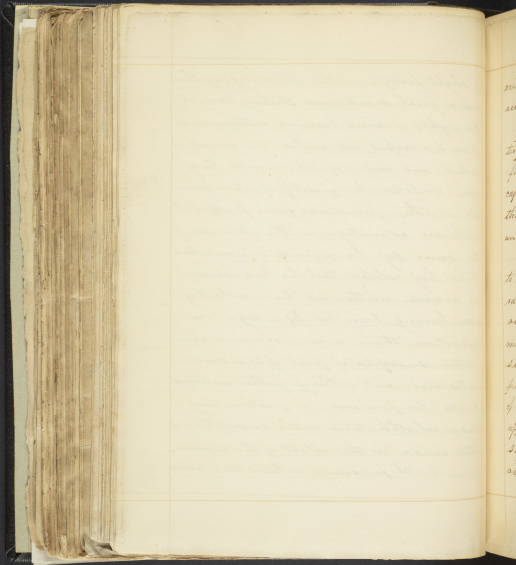
Dr Rush says it may arise from worms,
sleeping all night in the open air, a wound
in tendinous parts, great thirst, inflammation
of the stomach, the bite of an angry,
but not a diseased animal, and several
other causes. Dr Alibert relates a
case in his learned work on intermittents
of a man from exposure to the night air,
produced an intermittent, and the
disease terminated with all the symptoms
of hydrophobia.

I will in this place state
a case of a boy aged sixteen years, who
was attacked on the tenth of June, with



a slight fever, on the following day there was a great dread, and starting back at the sight, or even hearing water poured from one vessel into another, the convulsions violent, and very frequent, a wild fiery eye, considerable quantity of saliva from his mouth, opium was given freely but with no advantage, in the afternoon of the same day he expired in a convulsion, this boy stated that he had received no wound. neither did he recollect of ever having been bit by a dog, on dissection there was discovered an intus susception of part of the smaller intestines, but nothing further unnatural could be perceived, a question may arise whether this intus susception was the cause or the effect of the disease.

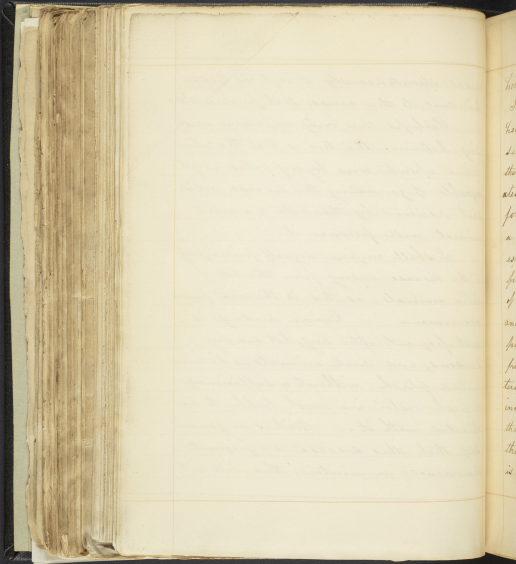
I presume when this disease



arises spontaneously it is to be treated according to the cause that produced it.

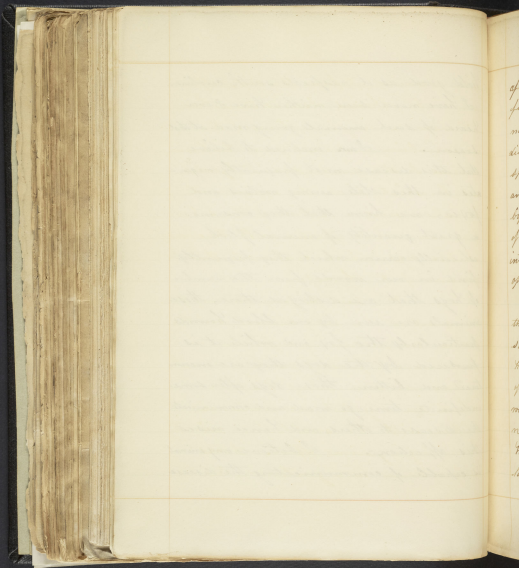
Perhaps the only difference existing between the two is that the saliva from spontaneous hydrophobia is not capable of generating the disease, while that received by the bite of a rabid animal will produce it.

I shall confine myself principally to the disease arising from the bite of rabid animals, as this is the most frequent occurrence. Canine madness is most frequent after long, hot and dry seasons, and such animals as live on putrid flesh, without a sufficiency of fresh water, are most liable to be affected with it. Writers in general say that this disease is of frequent occurrence in winter, this will not



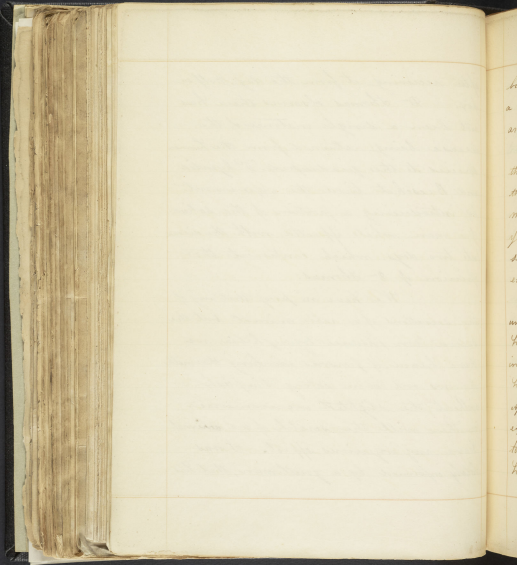
hold good as it respects south carolina.

I have never seen, neither have I ever heard of such animals going mad at that season. I am inclined to believe that this disease most frequently originates in this state among wolves and foxes, we know that they consume a great quantity of animal flesh, especially carrion which they frequently find in our woods from the number of hogs that are destroyed there, those animals are run by our blood hounds particularly the fox and while it is pursued by the dogs they are encountered and bitten, those dogs after some indefinite time go mad and communicate the disease to others, and hence arises this affection. I believe any animal is capable of communicating the disease



after receiving it from the dog, wolf or
fox. Dr Thomas observes there has
not been a single instance of the
disease being returned from the human
species to the quadruped. Dr Myndie
and Breschet tried the experiment
by introducing a portion of the saliva
of a man while affected with the disease
into two dogs, which controverts the
opinion of Dr Thomas.

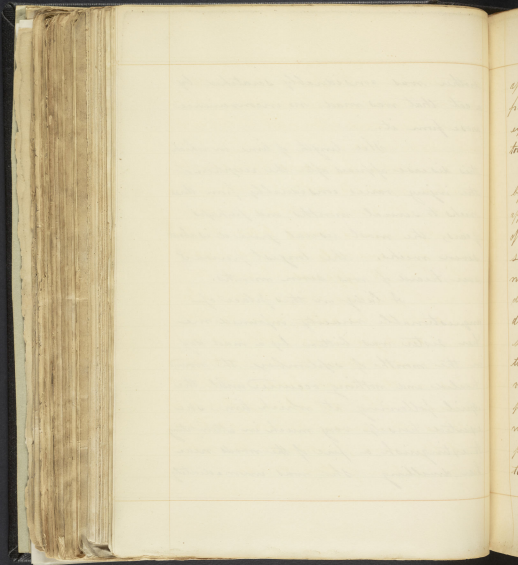
We have no proof that any of
the secretions of a rabid animal but the
saliva can produce hydrophobia, we
have heard of persons drinking the milk
of cows and even eating their flesh
without the slightest inconvenience,
neither will the scratch of the animal
have any injurious effect. I was
lately informed by a gentleman, that his



bother was considerably scratched by a cat that was mad. no inconvenience arose from it.

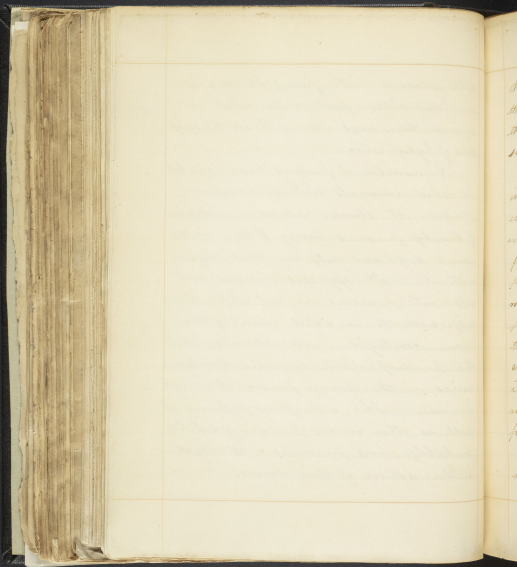
The length of time in which this disease appears after the reception of the injury varies considerably, from three weeks to several months, and perhaps years, the most usual period is about seven weeks. the longest period I ever heard of was seven months.

A lady in this place of unquestionable veracity informed me her sister was bitten by a mad dog in the month of september. the wound healed and nothing occurred until the April following at which time she expected herself very much in attempting to extinguish a fire of the woods near her dwelling. she was immediately



after attacked with pains shooting up from the bitten part to the throat and expired three days after with all the symptoms of hydrophobia.

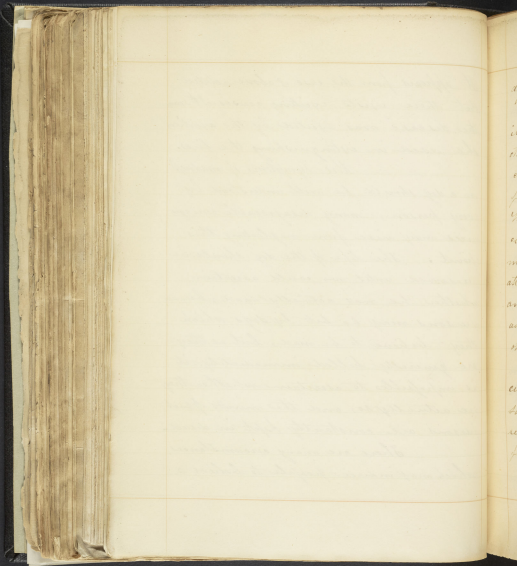
A number of persons have been bit by rabid animals without becoming affected. Mr Hunter relates an instance of twenty persons being bitten by the same dog and only one was seized with it. It appears obvious that different persons are not alike pre disposed to be acted upon by the same contagion, and likewise that the predisposition to receive contagion varies in the same person at different periods. The depressing poisons, as well as other causes producing debility, probably may predispose the system to the action of this virus.



It appears from the case I above related that there exists exciting causes. It seems the disease was excited by the exertion she used in extinguishing the fire.

The symptoms of madness in a dog should be well understood by every person; many disagreeable consequences may arise from neglecting this point. The life of the dog should be preserved until we could ascertain whether he was actually mad, because persons may be bit by dogs which they believe to be mad, but as they are generally killed immediately, it is impossible to ascertain whether they are actually so, and the minds of such persons are constantly kept in dread.

There are many circumstances which may induce people to believe a

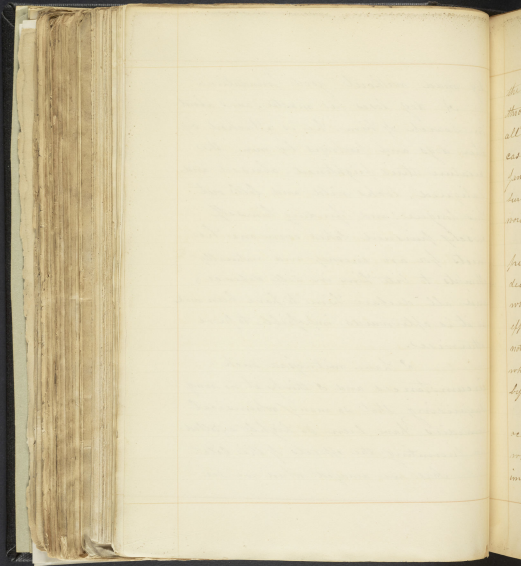


dog mad without good foundations.

A dog loses his master, runs about in search of him. He is attacked by other dogs and perhaps by men, the creature thus frightened, abused and fatigued, looks wild and lolls out his tongue, and finding himself closely pursued takes every one he meets for an enemy and naturally attempts to bite him in self defence, and all declare him to have been mad, as it is afterwards impossible to prove otherwise.

I have witnessed such circumstances and I think it no way surprising that so many whimsical remedies have been so highly extolled for preventing the effects of this bite.

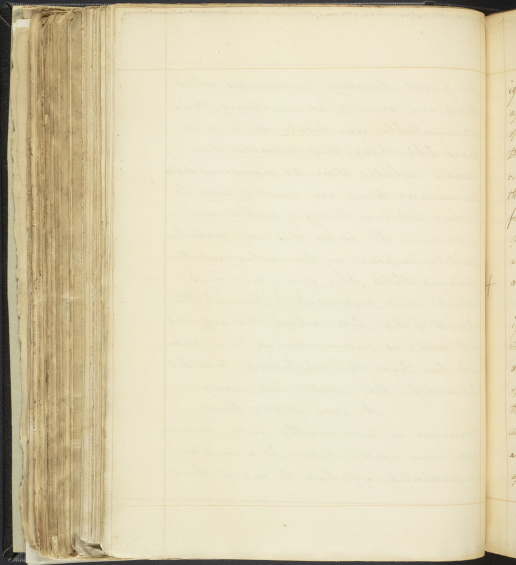
Are we amazed when we see



the proud boasting ignoramuses which
throng our country, administering their
all infallible remedies?— no, it is in
cases like these they promote their
fame, while their too numerous dupes
surrounding them, are almost ready to
worship them as beings of another world.

It is in this way credulous
people impose on themselves, and then
deceive others. The same medicine
which was supposed to prevent the
effects of the bite when the dog was
not mad, is recommended to a person
who has had the misfortune to be bit
by a dog that really was mad.

A case of this kind
occurred a few months since, a man
who was really bitten by a mad dog
immediately applied to one of those



ignorant pretenders (an Old Woman) she
assured him that by applying a piece
of fat meat well covered with salt to
the injured part, and perhaps blowing
on the wound, and uttering a few words,
that he would never sustain any injury
from the bite, he assented to the
proposal, trusted to the remedy
and paid the price of his credulity
with his life.

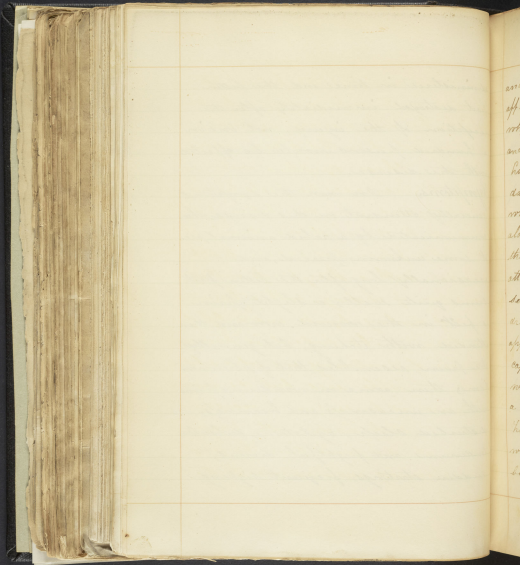
It is to the credulity and
ignorance of such people we are to
attribute the frequent fatality of this
disease, and not so much to the want
of proper remedies, I am persuaded
though not from actual experience?
but from the nature of the cases
and from the opinion of men capable
of judging if proper medicines were

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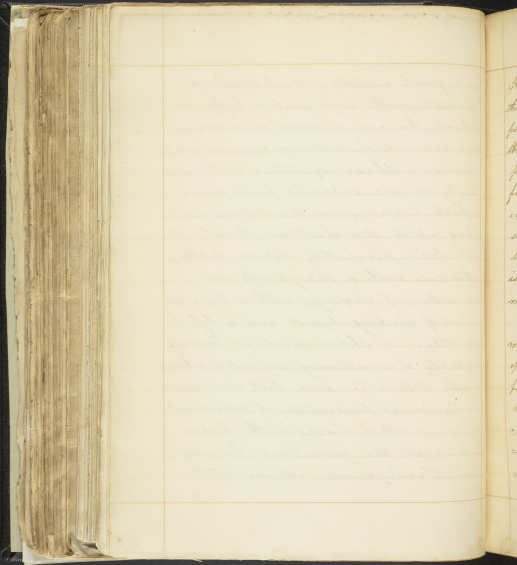
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administered in time and the bitten
part destroyed immediately after the
reception of the injury, not one in
a hundred persons would be affected
with the disease.

Symptoms. In man the symptoms
generally attendant on this disease, when
communicated by a rabid animal, are
at some unknown period, and
occasionally long after the bitten part
seems quite well, a slight pain
is felt in the wound, now and then
attended with itching, but generally
the pain resembles that of rheuma-
tism; then come on wandering pains
with an uneasiness and heaviness,
disturbed sleep, agitation, subsultus
tendinum and frightful dreams,
sudden startings, frequent sighing

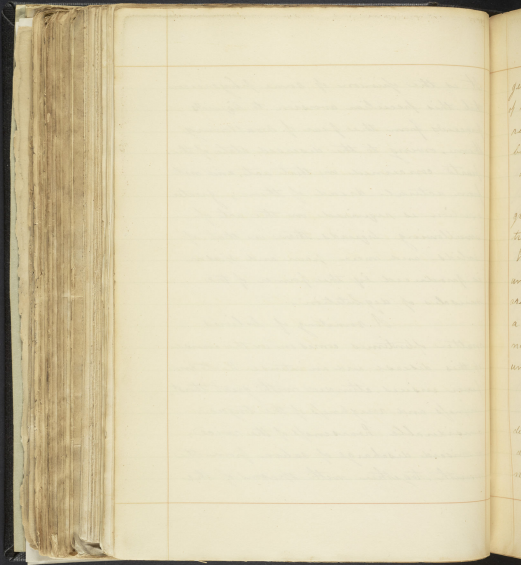


and great anxiety, the patient is affected with deep melancholy for which he can discover no cause, and from which nothing can relieve him. These symptoms continuing daily to increase, he feels pains which extend from the bottom part along up to the chest and throat, at the latter place they appear to stop, attended with a straightness and sensation of choking, with a horror and dread of drinking liquids and a loss of appetite. The patient is however capable of swallowing any solid substance with tolerable ease but the moment a liquid is presented it occasions him to start back with horror, while at the same time he may be laboring under extreme thirst.



It is the opinion of some physicians that this peculiar aversion to liquids proceeds from the fear of swallowing them, owing to the diseased state of the parts concerned in that act, and not from actual dread of them; greater exertion is required in the act of swallowing liquids, than in that of solids, and more pain and spasm is produced by the former of the muscles of deglutition.

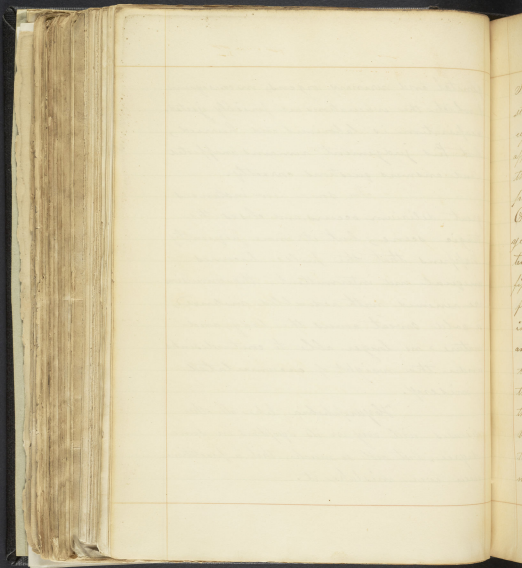
A vomiting of bilious matter sometimes comes on in the course of this disease, and an intense heat and fever ensues, attended with great thirst, dryness and roughness of the tongue, considerable hoarseness of the voice, a viscid discharge of saliva from the mouth, together with spasms of the



genital and urinary organs, in consequence of which the evacuations are forcibly ejected, respiration is laborious and hurried, but his judgement remains unaffected and answers questions correctly.

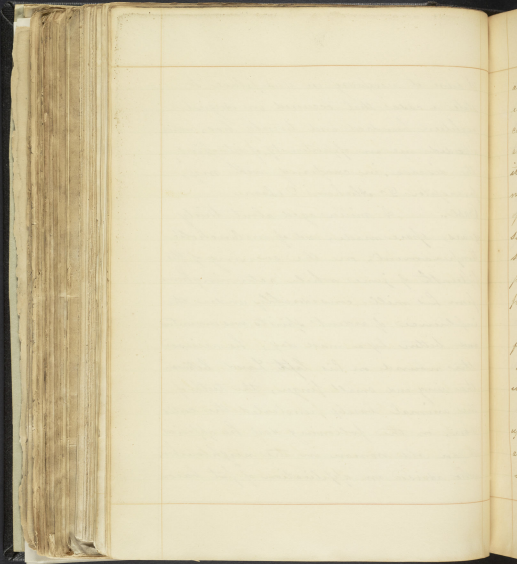
In some few instances great delirium occurs, and closes the tragic scene, but it more frequently happens that the pulse becomes unequal and intermittent, the convulsions are renewed with redoubled violence, a cold sweat covers the body, and nature no longer able to contend, sinks under the weight of accumulated misery.

Hydrophobia, like all other diseases, will vary in its symptoms in some degree, but not so much, that a practitioner need ever mistake it.



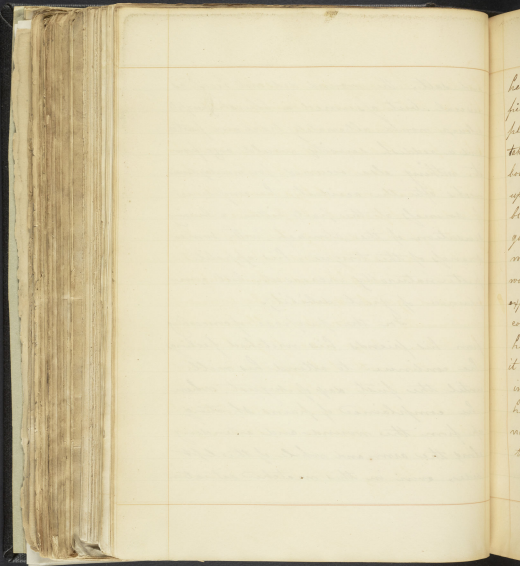
I deem it necessary in this place to state a case that occurred in August eighteen hundred and twenty two, which afforded me an opportunity of witnessing the disease, in company with my preceptor Dr. Ashbourn DeLeon.

Case.. A miller aged about thirty years, spare made, and of melancholic temperament, on the evening of the fifteenth of June while returning home from his mill, considerably under the influence of ardent spirits, was encountered and bitten by a mad dog, he received the wound on his left hand between the ring and small finger, the teeth of the animal barely penetrated the cutis vera, on the following day he applied to an old woman in the neighbourhood who advised an application of fat bacon



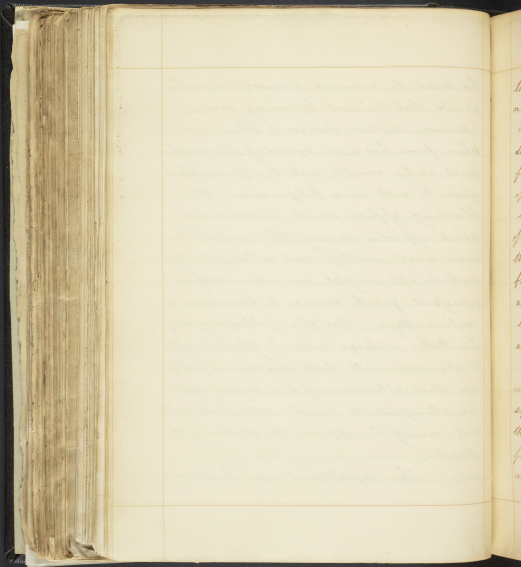
and salt, the wound did not heal as usual, but assumed a bluish purple colour, would alternately heal and fester and a reddish sensibility would oze from it, nothing else occurred for nearly seven weeks after the accident, he complained of soreness at the part bitten, a burning sensation of the stomach, with some soreness of the tongue, his appetite preternaturally increased, but complained of great debility.

For the purpose of concealing from his friends his wretched feelings he continued to attend his mill until the first day of August, when he complained of pains shooting up from the wound and extending along the arm and whole of the left side, even in this wretched situation



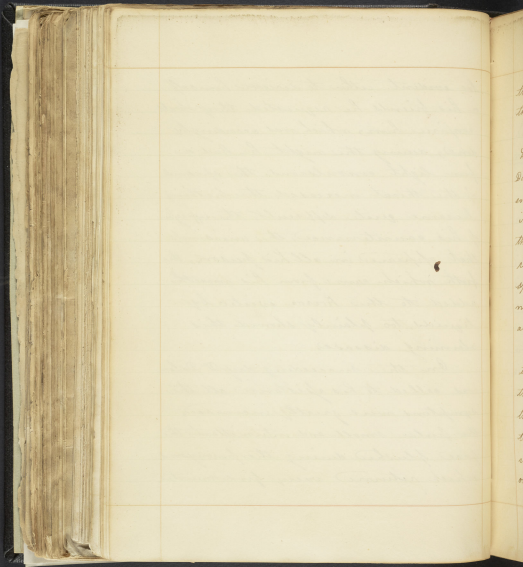
he tried to persuade himself and his friends that he was labouring under pleurisy, sixteen ounces of blood was taken from his arm by one of his neighbours, as he could not be prevailed upon to call in a physician. the bleeding appeared to produce no good effects during the night he was very restless and watchful; he walked all night, and when confined expressed great desire to be running continually. On the following day he took a large dose of Glauber's salts, it operated well, but afforded no relief. in the afternoon of the same day he attempted to drink water but could not, owing I suppose to spasms of the throat.

The symptoms now becoming



too evident either to deceive himself
or his friends he requested they should
confine him, which was accordingly
done, during the night he had a
few light convulsions. the spasms
of the throat increased. the breathing
became quite difficult, the expression
of his countenance, the uneasiness
that appeared in all his person, the
froth which came from his mouth
added to the horror excited by
liquids, too plainly showed this
alarming disease.

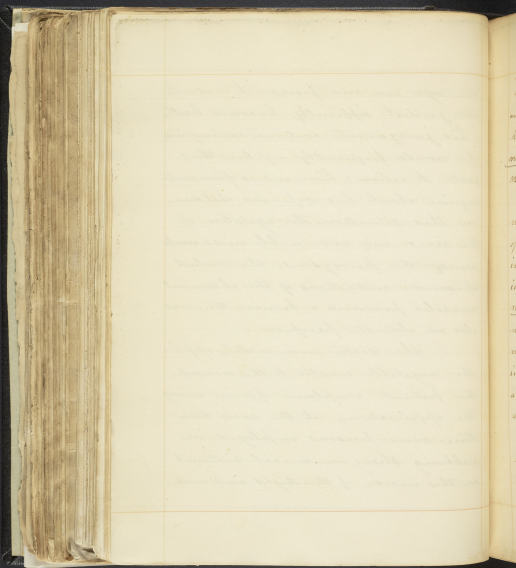
On the succeeding day Dr Dalton
was called to his assistance all the
symptoms were greatly increased,
the pulse small and intermittent, the
face flushed during the paroxysms,
which returned every five minutes,



the eyes red and fierce, it was with the greatest difficulty he could breathe.

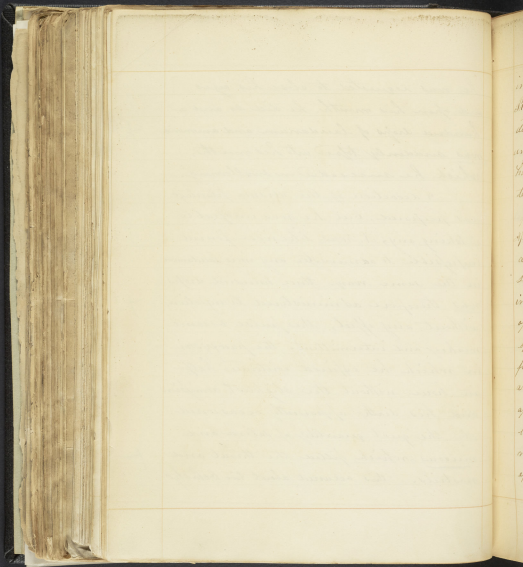
His judgement continued unimpaired. He would frequently implore the Doctor to relieve him, and so often would enquire about his wife and children, in this situation the agitation of the air or any considerable noise would renew the paroxysms, the violent spasmodic contractions of the abdominal muscles produced a heurnia, there was also an obstinate priapism.

The Doctor immediately applied the vegetable caustic to the wound, the patient complained of pain during the application, at the same time there were persons employed in rubbing strong mercurial ointment on the inside of the thighs and neck



he was requested to close his eyes
and open his mouth. he did so and a
hundred drops of laudanum and ammonia
was suddenly forced into his mouth,
which he succeeded in swallowing.

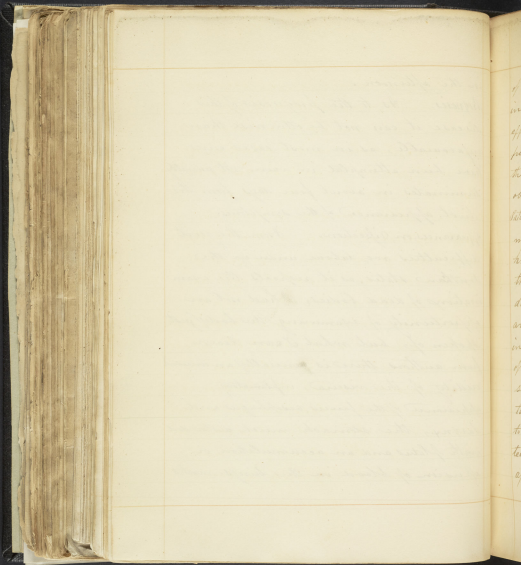
A decoction of the alisma plantago
was prepared, but he was incapable
of taking any, it was likewise found
impossible to administer any more laudanum
in the same way, three hundred drops
was therefore administered by injection,
without any effect, the pulse became
weaker and intermittent, the paroxysm
in which he expired continued half
an hour without the slightest remission
and his death apparently occasioned,
by the great quantity of saliva and
mucous which filled the throat and
nostrils, this occurred about two o'clock



in the afternoon.

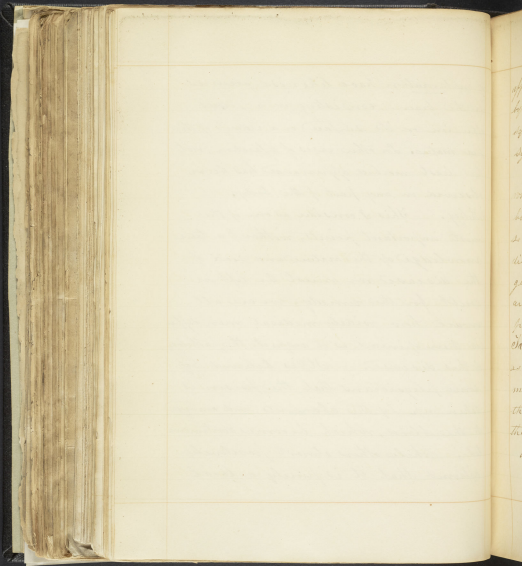
Prognosis. As to the prognosis of this disease it can not be otherwise than unfavourable, as in most cases cures have been attempted in vain. It generally terminates in about four days from the first appearance of the symptoms.

Appearances, on Dissection. From the great difficulties we labour under in the Southern States, as it respects the examinations of dead bodies, I had not an opportunity of examining the body just spoken of, but what I can learn from authors there is generally an unusual vidity of the viscera, inflammatory appearance of the fauces, oesophagus and larynx, the stomach much distended with flatus and an accumulation or effusion of blood in the lungs, marks



of inflammation have likewise occurred
in the brain, consisting in a serous
effusion on its surface or a redness of the
pia mater. In other cases of dissection, not
the least morbid appearance has been
observed in any part of the body.

Pathology. This I consider as one of the
most important points, without a true
knowledge of the nature and seat of
the disease we must be left in
doubt for the remedy, we are all
aware how widely medical men differ
in their opinions, as it respects the pathology
of this disease. It is believed by
some physicians that the poison is
taken up by the absorbents, and conveyed
to the blood, which becomes contamina-
ted, while others almost positively
affirms that it is purely a local

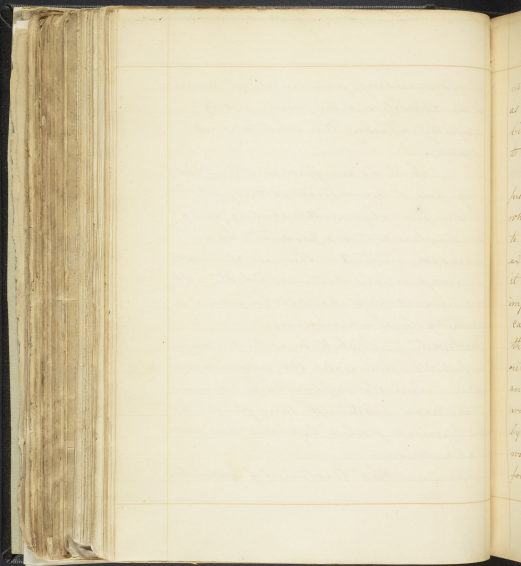


affections arising from irritation, produced by the deposition of the poison, and by sympathy affecting the whole nervous system.

If it be an affection of the blood why does it commence at the part bitten and why are the shooting pains so similar to those produced by a diseased nerve? These are the most generally received opinions, whether either are correct will be left for future pathologists to determine.

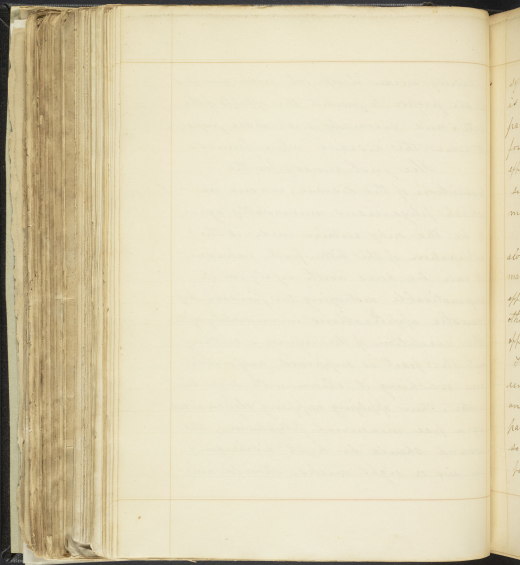
Treatment. I shall in as brief a manner as possible, enumerate the medicines now most frequently employed, and some few that have maintained their ground to the present period, but why I am not able to say.

The treatment of Hydrophobia



naturally divides itself into such remedies as are proper to prevent the effects of the bite, and secondly such as are proper to cure the disease when formed.

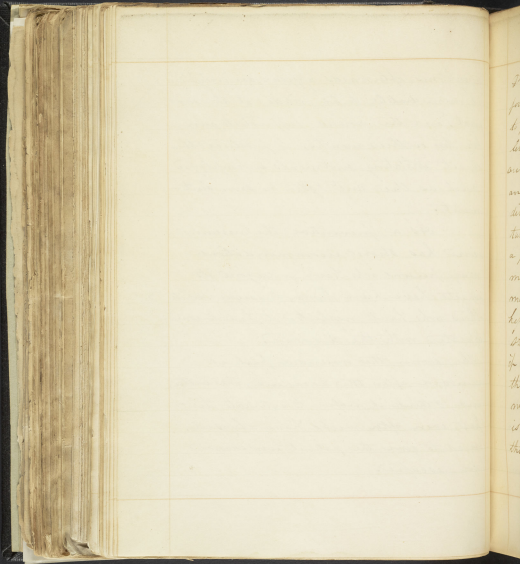
The first remedy for the prevention of the disease, and one in which physicians universally agree to be the only certain mode is the extirpation of the bitten part, provided it can be done with safety, or if impracticable destroying the poison by caustic applications immediately after the reception of the injury, cutting out the part is supposed preferable and washing it clean with soap and water, then applying cupping glasses, aided by a free mercurial ptyalism, the wound should be kept discharging for six or eight weeks, should any



symptoms afterwards appear, an incision
is immediately to be made at the same
part, and the wound suffered to run
for two or three months, to produce the
effect irritating ointments are employed
such as the Ungt Lythae or Savin oint-
ment.

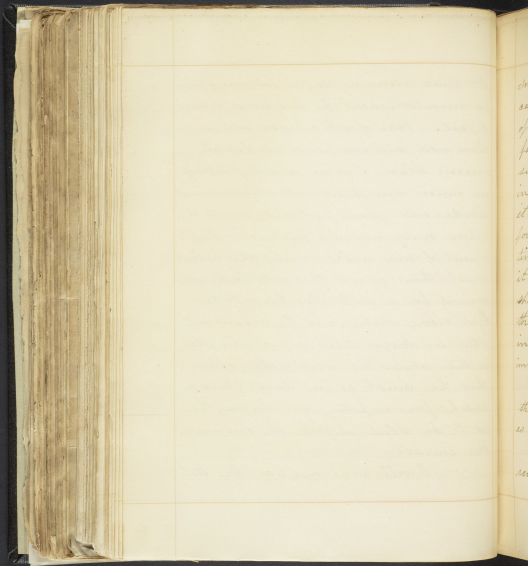
As a preventive the mercury
alone has strong recommendations,
many persons who have undergone its
effects have been known to escape, while
others who have neglected it, have become
afflicted with the disease. ✓

The sooner the wounded part is
removed after the accident, the better,
and I think it proper to extirpate the
part even after weeks have elapsed,
so as to give the patient every chance
for escape.



Ja Head recommends the following plan
for prevention, so me he has never known
to fail. Take of ash coloured ground
liver root dried and powdered half an
ounce, black pepper powdered fourth of
an ounce mix them well together and
divide into four portions, one to be
taken every morning fasting in half
a pint of cows milk warm, the patient
must then go into the cold bath every
morning for a month, his head to be
kept above water, and he should not
stay in longer than half a minute
if the water be very cold, after
this he must go in three times a
week for a fortnight longer, he
is to be bled before he commences
this course.

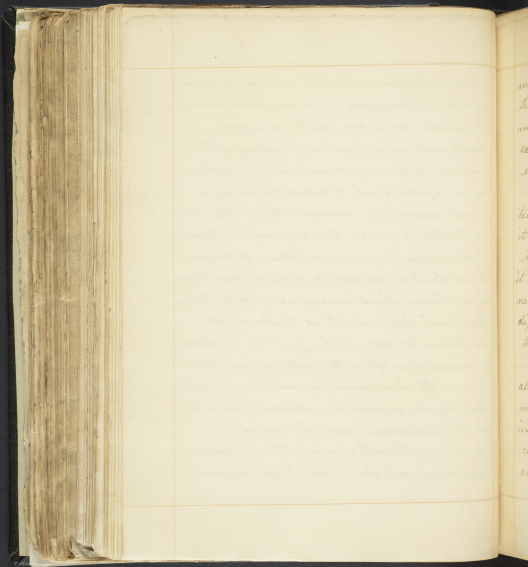
I will next mention the Col



India specific a longin remedy, as it is called it consists of twenty four grains of native cinabar, with as much facitious, made into a powder with sixteen grains of musk, to be taken in a teacupful of arrack or brandy. it is said to secure the patient for thirty days, at the expiration of which time should any symptoms appear it is to be repeated, but if symptoms show themselves immediately after taking the first portion it is to be repeated in three hours. The first to be taken immediately after the bite as possible.

It has been proposed to apply the liquor ammonia externally, as well as the internal exhibition of it.

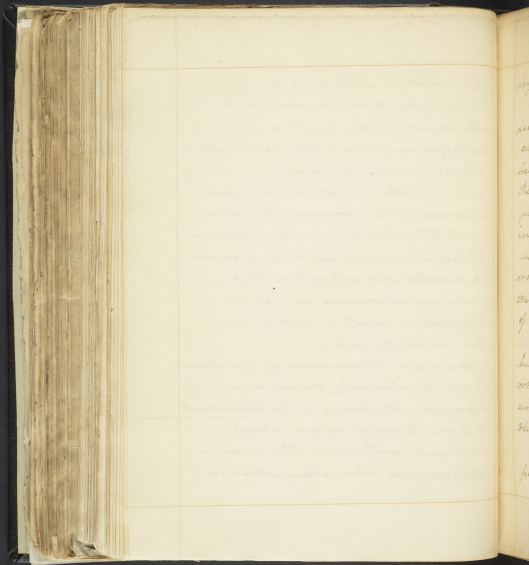
Notwithstanding the various remedies which have been proposed



and extolled as antidotes to this disease, the only one which we can confide in with safety is the exsorption or cauterization of the bitten part, with a liberal use of mercury.

As it respects the further treatment of this disease that is when it actually has made its appearance less unanimity prevails, some considering it a vascular and inflammatory, others a nervous and spasmodic disease, a difference must necessarily mark their method of cure.

Some for the removal of this disease almost exclusively depend on a mercurial ptyalism, while others shew in high terms of opium alone or combined with some other powerful antispasmodics when administered in

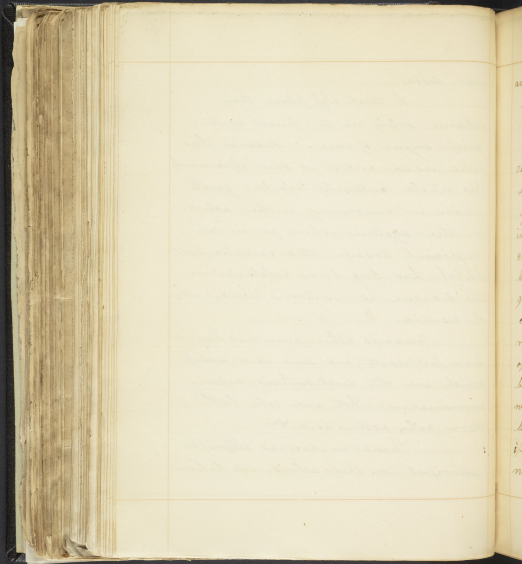


large doses.

A third class place their reliance solely on the lancet as the chief engine of cure. Arsenic has been used, and it is said officiously, this article certainly possesses great power in overcoming existing action in the system when given in sufficient doses. The carnatic pill which has long been celebrated in this disease, is composed principally of arsenic.

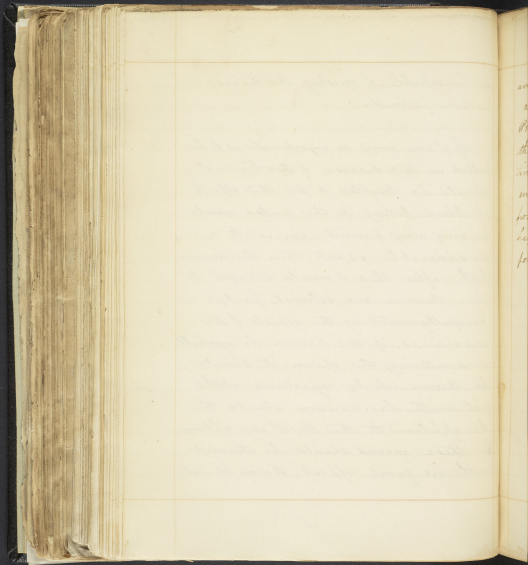
Various other remedies have been proposed, and some used, among which are the Linet cantharis, Cyrum ammoniacum, Hot and cold bath, olive oil, acetic acid &c.

These medicines although powerful in themselves, we believe



are incapable of resisting the disease
when formed.

If I am ever so unfortunate as to be
called in to a disease of this kind, I
should be tempted to try the effects
of blood letting, if the pulse would
in any way permit, carried to a
considerable extent, then the warm
bath, after this I would attempt to
give opium and calomel freely,
carefully watching the effects of the
medicines, if the patient be incapable
of swallowing the opium, it should
be thrown up by injections, cloths
wet with laudanum should then
be applied to the throat and abdomen.
if these means should be attended
with no good effect, I would make



an artificial opening into the wind pipe,
as proposed I think first by Doctor
Physick, obviating by this operation
the most fatal symptom and giving
time for the effects of the medicines
employed, should the patient recover
from this attack, I would put and
keep him under a mercurial course
for some time.

